

GEOINFORMATICS CENTER

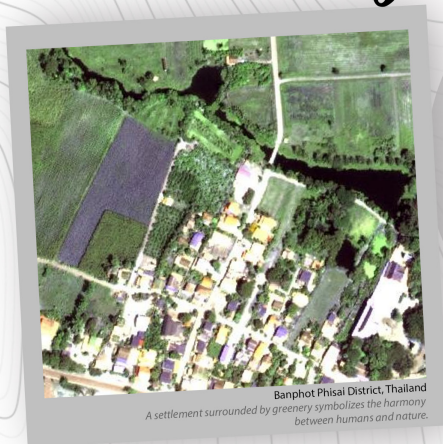
NEWSLETTER

January 2024

GEOINFORMATICS CENTER WISHING YOU

happy new year

2024



Banphot Phisai District, Thailand
A settlement surrounded by greenery symbolizes the harmony between humans and nature.

May the new year bring peace, prosperity and happiness.

A Warm Welcome for 2024

The Geoinformatics Center of the Asian Institute of Technology wishes you a blessed and happy new year of 2024. We start a fresh page of our lives with joyous and cheerful spirits.

GIC will be celebrating its 25th year of services in the geospatial field this year. GIC has been acknowledged as the leading research consultancy in the geospatial field, with frequent geospatial products that aim to help with everyday issues.

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The 44th Asian Conference on Remote Sensing

Highlighted
Events



Momentum in ACRS in the opening ceremony (up) and welcoming party with traditional culture show (down)

ACRS is an official technical meeting and the longest-running annual gathering of the Asian Association on Remote Sensing (AARS). The conference has been running from 1980 until 2023, and in 2023, ACRS was held in Taipei, Taiwan. This year, GIC was participating in the plastic portfolio initiatives.

GIC presented “Developing Integrated Modelling and Mapping Techniques for Calculating Plastic Leakage to the Waterway for National Action Plan”. This presentation elaborates on the work under the project with Japan-ASEAN Integrated Fund (JAIF) and ongoing research and development (RnD) on plastic waste management. The presentation was held at the RS-11 Hydrology session, where GIC presented the hydrological factors in determining the plastic waste material. The research will be published under Asian Journal of Geoinformatics in 2024.

RiskChanges Published in UNDRR Prevention Web

An open-source tool, RiskChanges, developed by GIC in partnership with ITC, has channelled the solutions for robust and effective management and decision-making in multi-hazard risk. Under PreventionWeb, a community platform from the United Nations Office for Disaster and Risk Reduction (UNDRR), the RiskChanges team shared the story of the utility, capability, and acknowledgement of RiskChanges. With the drive of community-based digital technology, RiskChanges helps people know more about risks and hazards in their area of interest.

Access here for the full article in [PreventionWeb](#).



RiskChanges Platform Interface (up) and the depict features workflow (down). Source: PreventionWeb



Asia Regional Workshop on Tools and Protocols for Riverine Plastic Pollution Monitoring



The participants and facilitator of the Regional Workshop in Sukosol Hotel, Bangkok, Thailand.

The Geoinformatics Center participated in the Regional Workshop on Tools and Protocols for Riverine Plastic Pollution Monitoring on Promotion of Action Against Marine Plastic Litter in Asia, which was warmly hosted by the UN Environment Programme – Regional Asia-Pacific Office and Asian Institute of Technology. The regional workshop was held on 16th to 17th October 2023. More than nine countries were represented in this workshop.

The protocol was driven by the potential of data in evidence-based policymaking. Drawing on their significant involvement in the previous CounterMEASURE Phase-II project, GIC highlighted past successes and ongoing developments in addressing the plastic waste issue in the region. GIC presented the science-based monitoring tool, focusing on using patterns as the featured tool.

Pacific Sub-Regional Training on Digital Technologies for Disaster Risk Management



The Asian and Pacific Training Center for Information and Communication Technology for Development (APCICT) and the United Nations Office for Outer Space Affairs (UNOOSA) organised training on Digital Technologies for Disaster Risk Management (DRM) in Suva, Fiji.

Participants from Pacific countries such as Samoa, Solomon Islands, French Polynesia, Tonga, Papua New Guinea, and Cook Islands attended the training.

Training Participants on the hands-on session of RiskChanges.

As the resource persons, GIC and ITC delivered a basic understanding of natural disasters and multi-hazard concepts. The RiskChanges tool was introduced in the practical sessions on utilising different spatial data and generating a map visualisation in their area.

Joint Research and Development of PyAEZ Modules and Validation in Laxenburg, Vienna

The Geoinformatics Center of AIT was working together with the UN Food and Agriculture (FAO) and the International Institute for Applied Systems Analysis (IIASA) for PyAEZ's new version development as the working group of the Global Agro-Ecological Zoning (GAEZ) framework.

GIC received an official invitation from IIASA for the R&D of PyAEZ modules and validation of outputs. Within a one-month visit duration in Laxenburg, Austria, GIC worked with IIASA researchers for the validation of the current PyAEZ implementation of Module II to V and modified according to GAEZ v4 logic, under their supervision



Left to Right: Dr Günther Fischer, Dr Sylvia Trambrend of IIASA, and Mr. Swun W Htet from GIC.

GIC in Sentinel Asia Activation for Vietnam Flood



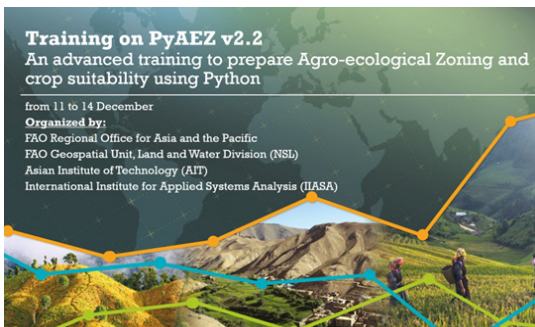
Meeting with Ministry of Natural Resources and Environment (MONRE) of Vietnam about the impacted area of flood.

A flood emergency in several provinces in Vietnam happened due to the heavy rainfall in November 2023. The impacted area included the region of Central Vietnam (Quang Binh, Quang Tri, Thua Thien Hue) from October to November 2023.

The GIC team visited Vietnam for validation of map products, field survey plans, and the request for localised disaster information. This segment aims to ensure the accuracy and reliability of the information provided by Sentinel Asia, fostering trust and confidence in the platform's outputs. The site visit utilised a built-in open-source mobile application.

PyAEZ version 2.2 Launching and Online Training

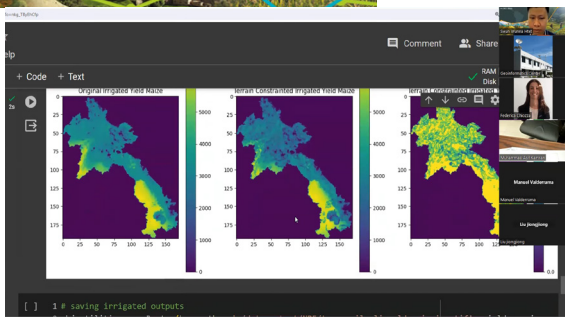
Capacity
Building



With the new version of PyAEZ v2.2, GIC facilitated a four-day online training of the new PyAEZ version.

A Glimpse of PyAEZ Training

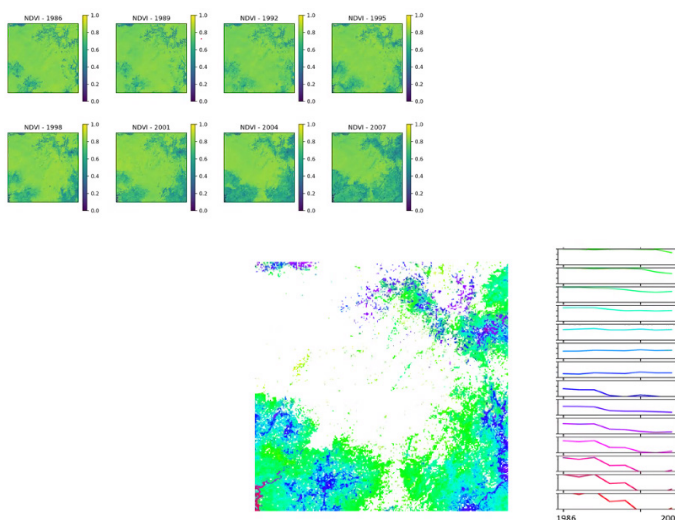
PyAEZ methodology is the Python-language toolbox for land evaluation assessment. In this 4-day online training, GIC, along with FAO and IIASA, was arranging the online training, which was open globally.



The update from PyAEZ v2.2 was about the update from the earlier version (v2.1) published in June 2023. The renewed and smoother workflow was provided, where GIC delivered the fundamentals of PyAEZ as the Python toolbox and the practical sessions on using PyAEZ.

Online training on PyAEZ 2.2 by FAO, IIASA, and AIT-GIC: demonstration by Swun W Htet (down)

Internal Workshop: New Trend Analytics Tool



Workflow of Trend Analysis Tool: satellite images (top) and trend result (down), delivered by Lakmal Deshapriya

GIC is in the process of developing a new tool for forthcoming projects focused on land change analysis and continuous monitoring. This tool will be built on the top of Google Earth Engine (GEE) and will facilitate information extraction for trend analysis through the utilization of multi-temporal satellite imagery.

With the creation of this tool, our team aims to overcome limitations in existing trend analysis tools. The proposed tool is designed to provide end-to-end analysis capabilities and is applicable across diverse domains, including but not limited to monitoring deforestation/reforestation, analyzing surface water dynamics, visualizing climate change data, and monitoring urban growth.

Women in GIC: Sharing Expertise in Geospatial Field

Featuring
Articles

FOSS4G Asia 2023 Seoul

In involving the open-source network in delivering real problem solutions, the community-based event of FOSS4G encourages the participant's diversity. Here, GIC presented its plastic pollution portfolio, embarking on enabling plastic waste data in the city. GIC also volunteered as the chair in the Asian Sustainability session, enlightening the discussions among the open-source community.



PIC: Aprilia Nidia Rinasti (Research Associate)
What She Presented: Extending the Utility in Open-source Data Processing for Plastic Waste Management Governance

The 18th APRU Symposium

Upon active research in Thailand and contributing to the robustness of data validation, GIC participated in the symposium of the Association of Pacific Rim Universities (APRU). APRU emphasised the symposium on disaster frontiers, where the initiatives under the Sentinel Asia project took the lead. GIC encourages women to take part and take the lead in remote sensing and modelling.



PIC: Angsana Chaksan (Senior Research Associate)
What She Presented: Assessment of Flood Control Measures (FCM) - 'Monkey's Cheeks' in the Chao Phraya River Basin.

The 3rd DSRD Symposium

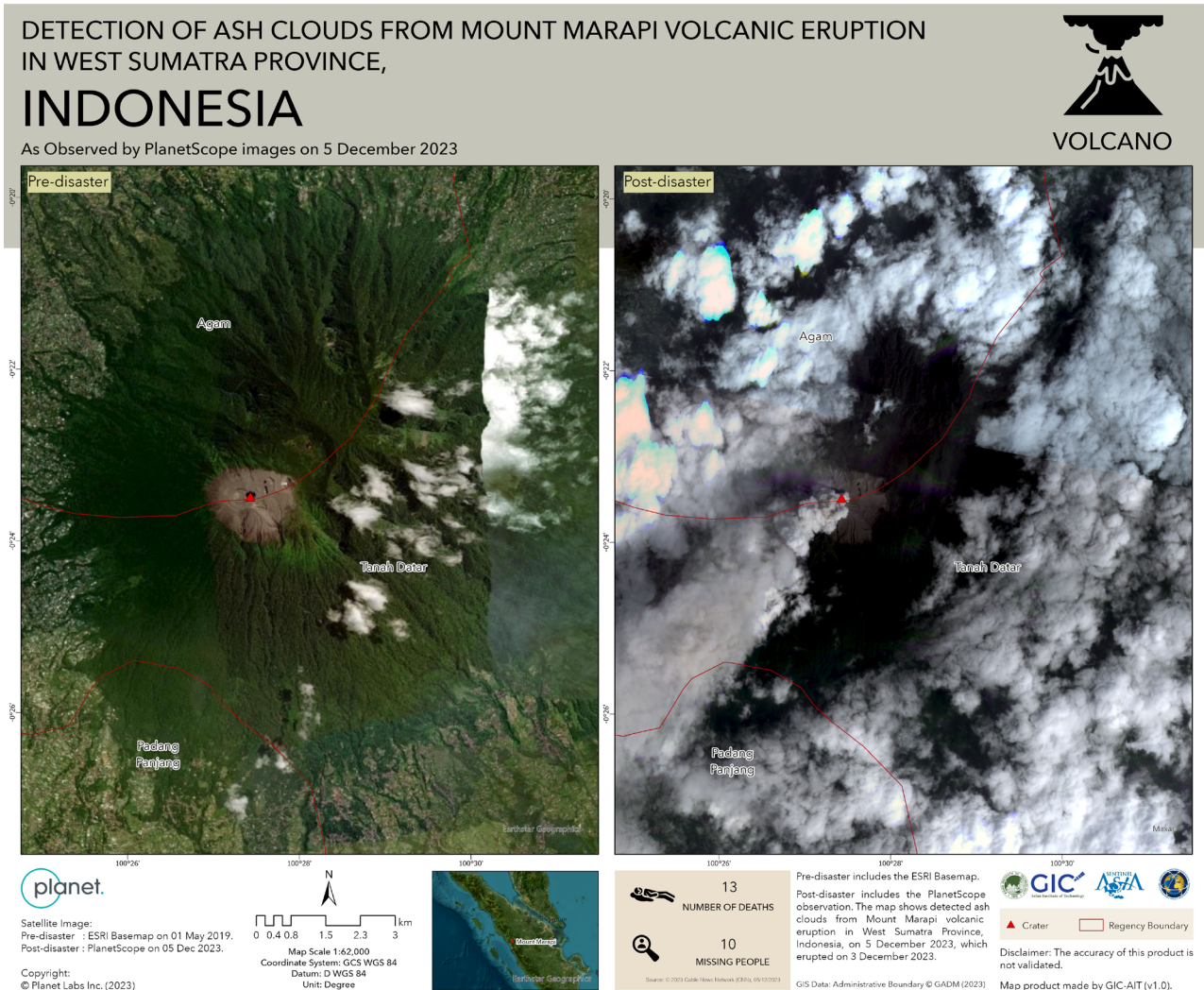
Under the RiskChanges, the lead female developer of the team represented the team on Disaster Resilience and Sustainable Development (DRSD). Leaning towards the ability to use geospatial tools in the community, GIC is taking part in discussions with practitioners, policymakers, and students in the Asia Pacific region and beyond.



PIC: Rabina Twayana (Research Associate)
What She Presented: RiskChanges: A WebGIS Application for Multi-Hazard Quantitative Risk Assessment

Mount Marapi Volcanic Eruption in Indonesia

(International Disaster Charter Activation, 853)



Map of Pre and Post Disaster at Mount Marapi, taken from the Satellite Imagery.

Mount Merapi, one of the world’s most active volcanoes in West Sumatra, erupted on Sunday (Dec 3), sending hot ash and other volcanic debris 3 kilometers or 1.7 miles into the atmosphere. The Asian Disaster Reduction Center (ADRC) on behalf of the National Research and Innovation Agency (BRIN) Indonesia, responded to the disaster to the International Disaster Charter (IDC). IDC pointed out GIC as the project manager for this activation.

The activation was shared with the end-user/requester (BRIN) to manage the disaster response activities. GIC produced the map from the optical remote sensing observation, observing the eruption and affected areas two days after the eruption. GIC generated the information from the National Search and Rescue Agency and PlanetScope for the optical image.

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